

APPLICATION SERIAL NO.09/679,856
RESPONSE DATED 2/17/04
REPLY TO OFFICE ACTION DATED 11/18/03

ATTORNEY DOCKET NO. 37634.00000
MILBANK, TWEED, HADLEY & McCLOY LLP

AMENDMENTS TO THE SPECIFICATION

Kindly enter the following amendments to the specification:

Please replace the paragraph spanning lines 5-24 of on page 8 of the specification with the following corrected paragraph (an addition to the text is indicated in bold and underlined font):

2. X-Ray Diffraction Analysis. Phase composition of the ground samples which were prepared for TEM observation was investigated using XRD (XDS2000 Scintag Inc.). To increase the signal/background ratio from YIG particles, the slit width of the diffractometer was increased five times and the measuring time was increased 20 times in comparison with the ordinary slit width and the measuring time, respectively. Despite that, the diffraction intensity from YIG particles was very low. The diffraction intensity increased with angle decrease due to the small angle peak of the polymer substrate. The diffraction peak width widening due to the slit width was compensated for by calibration using standard micron-size multicrystalline quartz. Using the half value width of diffraction peaks, Δ and Δ_m for the YIG nanocrystals of the present samples and the standard quartz sample, respectively, the mean crystalline size, D, of YIG nanoparticles in the silica matrix was determined by

$$D = \frac{0.91}{(\Delta - \Delta_m) \cos \theta}$$

where λ - 1.54 Å is the X-ray wavelength and 2θ is the diffraction angle.